



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2011-0652; Directorate Identifier 2010-NM-045-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

**SUMMARY:** We are revising an earlier proposed airworthiness directive (AD) for all The Boeing Company Model MD-90-30 airplanes. That NPRM proposed to require repetitive eddy current high frequency (ETHF) inspections for cracking on the aft side of the left and right wing rear spar lower caps at station Xrs=164.000, further ETHF inspections if cracks are found, and repair if necessary. The NPRM also proposed repetitive post-repair inspections, and repair if necessary. That NPRM was prompted by reports of cracks of the wing rear spar lower cap at the outboard flap, inboard drive hinge at station Xrs=164.000. This action revises that NPRM by adding repetitive post-repair inspections, and corrective action if necessary. We are proposing this supplemental NPRM to detect and correct cracking of the left and right rear spar lower caps, which could result in fuel leaks and damage to the wing skin or other structure, and consequent loss of the structural integrity of the wing. Since these actions impose an additional burden over that proposed in the NPRM, we are reopening the comment period to allow the public the chance to comment on these proposed changes.

**DATES:** We must receive comments on this supplemental NPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, California 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Roger Durbin, Airframe Branch, ANM-120L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone (562) 627-5233; fax (562) 627-5210; e-mail: [roger.durbin@faa.gov](mailto:roger.durbin@faa.gov).

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2011-0652; Directorate Identifier 2010-NM-045-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

**Discussion**

We issued an NPRM to amend 14 CFR part 39 to include an AD that would apply to all The Boeing Company Model MD-90-30 airplanes. That NPRM published in the Federal Register on July 8, 2011 (76 FR 40288). That NPRM proposed to require repetitive eddy current high frequency (ETHF) inspections for cracking on the aft side of the left and right wing rear spar lower caps at station Xrs=164.000, further ETHF inspections if cracks are found, and repair if necessary. The NPRM also proposed repetitive post-repair inspections, and repair if necessary.

### **Actions Since Previous NPRM (76 FR 40288, July 8, 2011) Was Issued**

Since we issued the previous NPRM (76 FR 40288, July 8, 2011), we have determined that it is necessary to add repetitive inspections for cracking on the wing rear spar lower caps at station Xrs=164.000 after the splice repair is done. The replacement spar cap is susceptible to fatigue cracking because its design is the same as that of the original spar cap.

### **Comments**

We gave the public the opportunity to comment on the previous NPRM (76 FR 40288, July 8, 2011). The following presents the comments received on the NPRM and the FAA's response to each comment.

### **Request for Inspection**

Boeing requested that we revise the original NPRM (76 FR 40288, July 8, 2011) to require an ETHF inspection on any splice repair within 30,000 flight cycles after the repair. Boeing explained that neither Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011 (which was cited as the appropriate source of service information for the original NPRM), nor the original NPRM itself addresses inspection of the replaced spar cap segment for fatigue cracking at flap hinge station Xrs=164.000. Boeing noted that the design of the original and replacement spar caps is the same, so the replacement spar cap is also susceptible to the same fatigue cracking issue. Boeing suggested that this change would affect paragraphs (h)(1)(ii), (h)(2)(ii), (h)(3)(ii), (i)(1), (i)(2)(i)(C), (i)(2)(ii), and (i)(3) of the original NPRM.

Boeing also explained that they will revise Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011, as soon as possible.

We agree with the request, for the reasons provided by the commenter. We have added this post-repair inspection in new paragraph (j) of this AD, and re-identified subsequent paragraphs accordingly.

## **FAA's Determination**

We are proposing this supplemental NPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of the original NPRM (76 FR 40288, July 8, 2011). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this supplemental NPRM.

## **Proposed Requirements of the Supplemental NPRM**

This supplemental NPRM would require accomplishing the actions specified in the service information described previously, except as discussed under “Differences Between the Supplemental NPRM and the Service Information.”

## **Differences Between the Supplemental NPRM and the Service Information**

Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011, does not specify corrective actions if cracking is found during any inspection of repaired areas, but this proposed AD would require repairing those conditions in one of the following ways:

- In accordance with a method that we approve; or
- Using data that meet the certification basis of the airplane, and that have been approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) whom we have authorized to make those findings.

## **Costs of Compliance**

We estimate that this proposed AD affects 51 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspection	4 work-hours X \$85 per hour = \$340 per inspection cycle	N/A	\$340 per inspection cycle	\$17,340 per inspection cycle

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this AD.

### Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs" describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

**PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2011-0652; Directorate Identifier 2010-NM-045-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all The Boeing Company Model MD-90-30 airplanes, certificated in any category.

**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by reports of cracks of the wing rear spar lower cap at the outboard flap, inboard drive hinge at station Xrs=164.000. We are issuing this AD to detect and correct cracking of the left and right rear spar lower caps, which could result in fuel leaks and damage to the wing skin or other structure, and consequent loss of the structural integrity of the wing.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Repetitive Inspections**

Before the accumulation of 30,000 total flight cycles, or within 10,000 flight cycles after the effective date of this AD, whichever occurs later, do an eddy current high frequency (ETHF) inspection for cracking on the aft side of the left and right wing rear spar lower caps at station Xrs=164.000, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. If no cracking is found on the left or right wing rear spar lower cap, repeat the inspection on the affected wing rear spar lower cap thereafter at intervals not to exceed 2,550 flight cycles. Doing a repair of the left or right wing rear spar lower cap required by this AD terminates the repetitive inspection required by this paragraph for that side only.

**(h) Further Inspections if Cracking of Two Inches or Less Is Found and Not in the Rear Spar Lower Cap, Repair, and Repetitive Post-Repair Inspections**

If, during any inspection required by paragraph (g) of this AD, any crack is found that is two inches or less and not in the rear spar lower cap forward horizontal leg radius: Before further flight, do an ETHF inspection for cracking on the affected wing rear spar upper cap at station Xrs=164.000, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(1) If no crack is found in the rear spar upper cap during the inspection required in paragraph (h) of this AD, do the actions specified in paragraph (h)(1)(i) or (h)(1)(ii) of this AD.

(i) Option 1: Before further flight, do a doubler repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 13,500 flight cycles after doing the doubler repair, do an ETHF inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an eddy current low frequency (ETLF) inspection and an ultrasonic (UT) inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at

intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(2) If any crack that is two inches or less is found in the rear spar upper cap during the inspection required by paragraph (h) of this AD, do the actions specified in paragraph (h)(2)(i) or (h)(2)(ii) of this AD.

(i) Option 1: Before further flight, do a doubler repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 13,500 flight cycles after doing the doubler repair, do an ETHF inspection for any cracking in the repaired area of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(3) If any crack that is greater than two inches is found in the rear spar upper cap during the inspection required by paragraph (h) of this AD, do the actions specified in paragraph (h)(3)(i) or (h)(3)(ii) of this AD.

(i) Option 1: Before further flight, do a splice repair of the rear spar upper cap and a doubler repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 13,500 flight cycles after doing the doubler repair, do an ETHF inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for any cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

**(i) Further Inspections if Cracking that Is Greater than Two Inches Is Found or Is in the Rear Spar Lower Cap, Repair, and Repetitive Post-Repair Inspections**

If, during any inspection required by paragraph (g) of this AD, any crack is found that is greater than two inches or is in the rear spar lower cap forward horizontal leg

radius, before further flight, do an ETHF inspection for cracking on the affected wing rear spar upper cap at station Xrs=164.000, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(1) If no crack is found in the rear spar upper cap, before further flight, do a splice repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for any cracking of the repaired area of the lower rear spar cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(2) If any crack that is two inches or less is found in the rear spar upper cap, do the actions specified in paragraph (i)(2)(i) or (i)(2)(ii) of this AD.

(i) Option 1: Do the actions specified in paragraphs (i)(2)(i)(A), (i)(2)(i)(B), and (i)(2)(i)(C) of this AD.

(A) Before further flight, do a doubler repair of the rear spar upper cap and a splice repair of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

(B) Within 13,500 flight cycles after doing the doubler repair required by paragraph (i)(2)(i)(A) of this AD, do an ETHF inspection for any cracking in the repaired area of the rear spar upper cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011.

Repeat the inspection thereafter at intervals not to exceed 8,500 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(C) Within 20,000 flight cycles after doing the splice repair required by paragraph (i)(2)(i)(A) of this AD, do an ETLF inspection and a UT inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(ii) Option 2: Before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after doing the splice repair, do an ETLF inspection and a UT inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

(3) If any crack that is greater than two inches is found in the rear spar upper cap, before further flight, do a splice repair of the rear spar upper and lower caps, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Within 20,000 flight cycles after

doing the splice repair, do an ETLF inspection and a UT inspection for cracking in the repaired area of the rear spar lower cap, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin MD90-57A026, Revision 1, dated February 23, 2011. Repeat the inspections thereafter at intervals not to exceed 3,000 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

**(j) Repeat ETHF Inspection**

For airplanes on which any splice repair was required by this AD: Within 30,000 flight cycles after the splice repair, repeat the inspection required by paragraph (g) of this AD for the repaired wing. If no cracking is found on the on the rear spar lower cap of the repaired wing, repeat the inspection on the affected wing rear spar lower cap thereafter at intervals not to exceed 2,550 flight cycles. If any cracking is found during any inspection required by this paragraph, before further flight, repair in accordance with a method approved in accordance with the procedures specified in paragraph (l) of this AD.

**(k) Credit for Previous Actions**

This paragraph provides credit for the actions required by paragraphs (g), (h), and (i) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin MD90-57A026, dated February 11, 2010.

**(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane and 14 CFR 25.571, Amendment 45, and the approval must specifically refer to this AD.

**(m) Related Information**

(1) For more information about this AD, contact Roger Durbin, Airframe Branch, ANM-120L, FAA, Los Angeles ACO, 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: (562) 627-5233; fax: (562) 627-5210; e-mail: [roger.durbin@faa.gov](mailto:roger.durbin@faa.gov).

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, California 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on July 13, 2012.

Michael Kaszycki,  
Acting Manager,

Transport Airplane Directorate,  
Aircraft Certification Service.

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